PRIMARY SARCOMA OF THE PROSTATE.*

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Mr. A., of Cheyenne, a man of 60 years, consulted me February 7, 1907, regarding a rapidly increasing difficulty in urination. He had been an unusually strong and healthy man. He stated that he never had any sort of bladder trouble until two months before at which time he began to notice a little pain and discomfort on urination and began to rise in the night to urinate. The symptoms rapidly increased and coincidently he lost flesh and strength.

Examination.—The man is five feet and nine inches in height; he weighs 180 pounds, having lost 25 pounds during the last two months. He complains of constant, severe pain in the hypogastric region and a constant pain which is less severe in the recto-perineal region. He urinates about every 1½ hours, day and night, urination being attended by increasing difficulty and pain. The urine is entirely normal. Catheterization finds no residual urine whatever; both soft rubber catheter and ordinary searcher pass easily to the bladder; no stone is found. Rectal examination reveals a very large, rounded, slightly nodular, balloon-like prostate. The finger does not reach the upper margin. The prostate bulges widely laterally and well posteriorly. The impression gained by the finger is an unusual one, the balloon-like mass seems so large and so uniform; it is only moderately tender, it is of moderate consistency; the abdomen is fat and rather rigid, the mass cannot be made out bimanually. The pulse is normal in frequency and in character; the heart sounds are clear; examination of the lungs is negative; the temperature is normal.

The patient was sent to a hospital and five days were spent in preparation for operation. During these days the urine was at all times abundant in quantity and normal in quality. While diagnosis was in doubt it seemed probable that the growth was malignant. The short duration of the symptoms, two months,

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the rapidity of growth, the balloon-like contour of the growth and the absence of residual urine pointed toward sarcoma, and a tentative diagnosis was accordingly made; cystoscopy was not done. The situation was fully explained to the patient who definitely requested operation.

Operation under ether by the drop method at the Mercy Hospital, February 12, 1907. Ordinary, inverted Y incision. The central tendon of the perineum and the recto-urethralis muscle were divided; the deep urethra was opened and the finger passed readily to the prostatic urethra. A gloved finger of the opposite hand in the rectum allowed bimanual palpation and showed the growth to be larger and to extend higher than was at first thought. The finger tore readily through the prostatic urethra into the left side of the mass and the process of enucleation was begun. This was attended by profuse, alarming hemorrhage; blood poured from the wound and the wound had to be firmly packed with hot salt cloths. As soon as packing controlled the hemorrhage enucleation was proceeded with, but was exceedingly difficult. Very frequent hemorrhages obliged one to stop and pack. Nowhere could a lead be gained between the gland and its capsule. Friable masses were reamed out from both sides of the gland and from it posteriorly. These to the eye had the appearance of sarcoma. An assistant's fist above the pubes crowded the bladder down, yet one could not reach the upper part of the growth; this upper part seemed fixed. As much as possible was brought down and torn away by heavy, ringed clamps. At all points the growth seemed fused with the prostatic capsule, and it was apparent that here and there a portion was left behind. A T-shaped tube along side of which was sewn a small irrigation tube was placed in the bladder and the large prostatic cavity firmly tamped and packed with sterile gauze. The loss of blood had been great and although salt infusions had been given on the table the patient was returned to his bed with a poor pulse.

During the succeeding 24 hours the patient's condition was precarious, but under copious salt infusions and ordinary stimulation he picked up and at the end of 36 hours was in fairly good condition and secreting a good amount of urine. At the end of the second day a double pneumonia appeared to which he succumbed on the fifth day. An autopsy was not permitted.

The masses of growth removed amounted to a double handfull. They were handed to Dr. J. A. Wilder, Professor of Pathology in the University of Denver, who makes the following report:

"The specimen consists of a number of large and small pieces of a reddish-gray, rather friable tissue. The pieces are irregular in shape, the larger ones are from two to five centimetres in diameter.

Histologic examination of sections from different parts shows the tissue to be composed chiefly of small round and oval cells with very little intercellular substance. A delicate fibrillar supporting meshwork in which the tumor cells lie can be made out in some areas. The nuclei of the cells are large and prominent and have a distinct nuclear membrane. A small ring of protoplasm can be seen around the nuclei of many of the cells, in others it cannot be seen. These cells have no definite arrangement. The vascular supply is fair. The bloodvessels have very thin walls and are surrounded by the tumor cells. The remains of the prostatic tissue are seen in some of the sections in the form of a stroma of unstriated muscle fibre and fibrous tissue containing gland-tubules lined with cuboidal epithelium, the glands in several instances containing corpora amylacea.

"*Diagnosis.*—Small round-celled sarcoma of the prostate."

In the foregoing case operative attempt was dangerous. Complete operative removal was to me impossible. Immediate microscopic examination of the first fragment removed from the growth might have certified its nature and thus have saved an operative death. The growth was extending so rapidly, however, that death by sarcoma would have been speedy. I doubt if the supra-pubic route would have given better access to the tumor than did the perineal, I judge that the hemorrhage was controlled better through the perineum than it could have been through the bladder.

A careful study and analysis of accessible literature records but 22 additional cases[1] of microscopically proven, primary

[1] In certain instances cases have been accepted by one writer and discarded by another. In the present communication the writer has endeavored to class as authentic only those cases microscopically proven and primary. For example, the case of Dupraz is here classed as probable only, as it possibly had a primary seat in the scapula. The cases accepted in this paper may be verified through the table of references. In order to identify them the writer appends the age of the patient and the form of the growth as follows:

sarcoma of the prostate. These are reported by Barth, Birsch-Hirschfeld, Burekhardt, Botescu, Gibson, Grätzer, Kaufmann, Levy, H. Marsh, Matthias, Oliva, Socin (2 cases), Schalek, Spanton, Stern, Tordeus, West, Wharton,[2] Wind, Van der Hoeven, and Verhoogen. Cases which are not definitely authenticated but which are probably true cases are reported by Adler, Aiken, Cabot, Coupland, Dupraz, Harris, Isambert, Jolly, MacGowan,[3] and Mann, while doubtful cases are instanced by Barth (2 added cases), Brée, Dickinson, Fergusson, Jolly (Anat. Specimen), Kapsammer, Reboul, Socin (added case), and Spanton.

The ages of the patients in the 23 cases classed as authentic are as follows:

15	years	13
16....30	"	4
31....60	"	5
Over 60	"	1
		23

The condition is therefore to be considered most frequent in childhood.

Histologic examination of the specimens obtained from these 23 cases shows the form of the sarcoma to be:

Barth, 17 years, spindle and myxo-sarcoma; Birsch-Hirschfeld, 2 years, adeno-sarcoma; Burckhardt, 50 years, spindle celled; Botescu, 2 years, angio-sarcoma; Gibson, 35 years, small round celled; Grätzer, 15 years, large round celled; Kaufmann, 1½ years, small round celled; Levy, 4 years, myxo-sarcoma; H. Marsh, 5 years, spindle celled; Matthias, 70 years, angio-sarcoma; Oliva, 18 years, small round celled; Socin, 8 months, small round celled (also 51 years, round celled); Schalek, 3 years, mixed celled; Spanton, 5 years, myxo-sarcoma; Stern, 4 years, small round celled; Tordeus, 8 months, spindle celled; Wharton, 35 years, small round celled; Wind, 5 years, small round celled; Verhoogen, 53 years, myxo-sarcoma; Van der Hoeven, 6½ years; "Sarcoma" microscopic examination; West, 21 years, mixed celled; Author's case.

[2] Case also reported by Hughes.

[3] A letter received from MacGowan since this paper was read leads the author to place his case in the accepted class.

Small round celled	in	8	cases
Spindle celled	"	3	"
Myxo-sarcoma	"	3	"
Spindle celled and myxo-sarcoma	"	2	"
Small round celled and spindle celled	"	1	"
Angio-sarcoma	"	2	"
Adeno-sarcoma	"	1	"
"Mixed" celled	"	1	"
Large round celled	"	1	"
Mic. examined but form not given		1	"
		23	cases

The small round celled form is therefore the most frequent.

As compared with carcinoma, sarcoma of the prostate is infrequent. Englebach gives as percentages carcinoma 86 per cent., sarcoma 14 per cent. This sarcoma percentage is undoubtedly very much too high. A reasonably accurate computation will not be made until reports are furnished on large clinics in which all prostatic growths are submitted to routine microscopic examination.

The diagnosis is at times easy, at times difficult. A rapidly growing tumor of the prostate in a child or youth is probably a sarcoma. So, as well, is a rapidly growing, soft, balloon-like prostatic tumor in an adult. Pain is generally marked and is referred to the pubes, perineum and rectum. Urinary urgency is not generally present in the early stages. As in the case which forms the subject of this paper an enormous growth may be unaccompanied by residual urine.

Prognosis in these cases is necessarily bad. In each of the authentic cases submitted to analysis by the writer either (a) the disease went on to a fatal termination or (b) the patient succumbed to operation or (c) to relapse after operation or (d) the case was reported simply as an operative recovery. An editorial writer in the Am. Jour. of Urology (1905–6, vol. 2, p. 129) goes so far as to say that the simplest and most rational treatment is to allow the disease to progress. While it is true that no lasting cure has thus far been reported it is but rational to assume that in the future early diagnosis and appropriate management, either by operation or by sero-

therapy or by both, may give to this disease a more hopeful outlook.

[Addendum—Nov. 22nd, 1907—Conforti and Favento (Sarcoma della prostata, Folia Urologica, Sept. 1907) in an interesting communication relate a well authenticated case and present a table of added cases. Their patient was a man of 45 years who died of cachexia 4 months after an operation for primary lymphosarcoma of the prostate. Their table embraces 30 additional cases. From this list I am able to take the following six true cases not presented in my own references:

(1) Bland-Sutton. Com. to the Clin. Soc. of London, 9 April, 1897—P't 7 yrs of age; spindle cell sarcoma.

(2) Guyon. Proust et Vian. Le Sarcome de la Prostate. Ann. Des mal. des org. gén.-urin. 1907. No. 10: P't 19 yrs of age; small round cell sarcoma.

(3) Kaufmann. Vide Socin & Burckhardt. P't 24½ yrs of age; lymphosarcoma.

(4) Rose. Zwei Fälle v. Prim. Sarc. d. Prostata. Com. Frei Verein. der. Chir. d. Berlin. 1901. P't 5 mos of age; small round cell sarcoma.

(5) Ibid. P't 2 yrs 9 mos of age; small round cell sarcoma.

(6) Stein. Archiv. f. Klin. Chir. Vol. 39. 1889. P't 25 yrs of age; "Sarcoma." (Mic. Exam'd.)

Including the case of Conforti and Favento 7 cases are to be added to the 23 presented in the body of this article. The addition of MacGowan's case makes a total of 31 authentic cases. C. A. P.]

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